

ON A NEW SUBFAMILY OF PHYLLOSTOME BATS.

BY

HARRISON ALLEN, M. D.

I have concluded that *Natalus* should be removed from the Vespertilionidae and should constitute a subfamily of the Phyllostomidae. The characters of the Natalinae are as follows: The nose-leaf absent in the adult, but rudimental in the late stage of the embryo. It forms an ovate elevation placed with long axis between the nostrils and reaches from the lip-margin to a short distance above the upper edge of the muzzle. A well-marked vertical line is seen in the third and fourth interdigital spaces, extending nearly their entire lengths. The vomer is produced and continuous with the crest of the basisphenoid bone; the sides of the mesopterygoid fossa are deeply concave. The ectoturbinal is a mere rudiment. Three premolars are present, both above and below, and six incisors below and four above, a wide interval separating the centrals. The cuboid bone projects plantarly; two phalanges are present in the third manal digit. The prosternum, first pair of ribs, and intercostal cartilages are co-ossified, much the same manner as in the remote *Hipposideros*. There is no terminal cartilage to the third manal digit.

The claim here made that the Natalinae are related to the Vampyri-group of the Phyllostomidae rests on the following statements: A rudiment of a nose-leaf, the median ridge of which persists, is seen in the late stage of the embryo. The premaxillae are united on the palate; the premolars are large, displayed from within outward; the upper molars possess a well developed hypocone. The interdigital spaces are sharply defined proximally, and are without skin-folds on the ventral surfaces; the tragus is thickened on the inner border, and the external basal lobe lies within the conch. The sternum is keeled throughout. The ulna is provided with a shaft. The first metacarpal bone is flexed. These characters sharply separate *Natalus* from the Vespertilionidae (Plecoti occasionally excepted). Some of the characters, such as the keeled sternum and fixed ulna, are found in other groups.

The long bones bear a close resemblance to those of Lobostomidae (genera *Mormops* and *Chilonycteris*), and *Macrotus* among the Vampyri. The femur is quite similar, as seen in the flange on the inner side of the shaft near the head (best seen in *Mormops*) and in the backward posi-

tion of the trochanters. The bones of the first row of phalanges of the foot gradually increase in length from the second to the fifth as in *Lobostomidae*. The loop of the superior semicircular canal of the auditory apparatus, as is the rule with the *Phyllostomidae*, is not occupied with bone. The astragalus is slightly sigmoid, as in *Chilonycteris*.

The characters which *Natalinae* enjoy in common with *Vespertilionidae* are the presence of two phalanges in the third manal digit; three premolars in each jaw, and incisors in two pairs in the upper jaw. In the arrangement of the nerve lines in the fourth interdental and in the shape of the second phalanx of the third manal digit the *Natalinae* resemble the *Emballonuridae*.

From *Noctilio* and *Lobostomidae* the *Natalinae* differ in the absence of an internal basal ridge to the auricle. The arrangement of the nerves in the fourth interdental space is exactly as in *Chilonycteris*. The proportions of the phalanges of the fourth and fifth fingers are almost exactly the same as in the genus last named.

The *Natalinae* resemble the genus *Plecotus* of the *Vespertilionidae* in the flexion of the pollical metacarpal bone; in the wide second interdental interspace; in the absence of a skin-fold at the proximal end of the

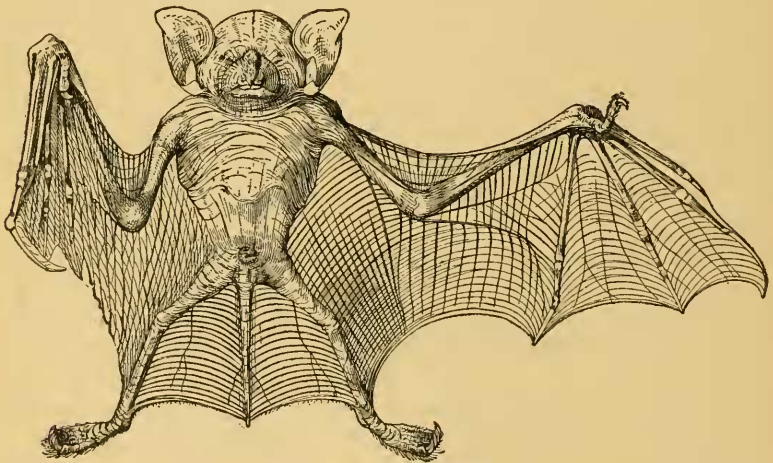


FIG. 1. Front view of an embryo of *Natalus stramineus*, showing rudimentary nose-leaf.

metacarpal bones, as well as in the absence of the accessory cartilage to the terminal cartilage of the fifth manal digit.

Two embryos were available for examination, both obtained from material in the Museum of the Academy of Natural Sciences of Philadelphia, collected by the late Mr. William M. Gabb in Santo Domingo. One of these specimens was oval, measured 25 millimeters in length and 15 in breadth. Length of head, 16 millimeters; foot, 9; thumb, 5. Sex apparently female. There was no trace of nose-leaf, the parts being quite the same as in the adult. The tragus was carried forward and laid on the cheek. It was simple and without the peculiarities of the adult.

The second specimen was larger than the first, and measured (the limbs being displayed), from crown to rump, 24 millimeters; length of head, 17 millimeters; foot, 9; thumb, 7. The tragus was erect and the peculiarities of the adult structures were beginning to announce themselves, though no hairs were present.

If the results obtained from the examination of the embryos be confirmed, *Natalus* presents a disposition for the integument at the muzzle to take on a different expression in the late form of the embryo or in the recently born, which is not found in an earlier stages of development or in the adult. Such a disposition is, so far as I know, unique, and it may be a temperate deduction to make that *Natalus* at no time bears a nose-leaf, but that the parts as seen in Fig. 1 in the late embryo are effects of shrinkage of the tissues under alcohol. Yet since *N. micropus* possesses an elevation at the top of the muzzle which is much the same in character as the form of *N. stramineus*, I have concluded to name the parts as they stand in the above diagnosis.

I have had an opportunity of examining both *Natalus stramineus* and *Natalus micropus*.